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Singapore aims to be a seedbed for the computing gaming industry. One educational initiative to develop in-country capacity is an ongoing gaming laboratory with the Massachusetts Institute of Technology (MIT) known as GAMBIT (Gamers, Asethetics, Mechanics, Business, Innovation, Technology). GAMBIT is one of several initiatives aimed at developing a complete ecosystem for computer game development in Singapore – an industry estimated to have been worth US$55.6 billion in 2008.

The lab is run jointly by the Comparative Media Studies programme at MIT, and the multi-agency Interactive Digital Media Research and Development Programme Office (IDMPO) hosted by the Media Development Authority of Singapore. Under the joint programme, students from Singapore representing various disciplines including technology, conceptual design, creative arts and game design, get to work with their overseas counterparts and research staff at MIT through a two-month internship in Boston.

At a 2008 GAMBIT event in Singapore, students demonstrated six new games developed in this lab. One of them, a recycling themed mobile game called *Backflow,* was a finalist in the Best Game and Mobile Game Design categories at the international Independent Games Festival. According to GAMBIT programme director Teo Chor Guan, 30% of the programme participants' cohort is now employed by major game companies in Singapore.

Singapore Management University (SMU) participated in GAMBIT for the first time in last year's event. SMU was represented by three students, Alexander Chong, Jonathan Zhan and Muhammad Bin Moshin, from the School of Information Systems. "We send our students to the GAMBIT programme because SMU realises that the games industry is particularly keen on hiring technically savvy students who are able to juggle both project management and business requirements," said Rajesh Krishna Balan, information systems professor at SMU.

In last year's event, a total of 45 students participated from all tertiary institutions in Singapore. Together with students from MIT, they worked in teams of 7 or 8, eventually producing a total of seven games. These were: two Facebook games, *Picopoke* and *Muzaic*; two 3D games, *MokiCombat* and *Phorm*; two 2D games, GumBeat and *Akrasia*; and one Nintendo DS educational game, *Oozert*.

Student Projects

Zhan, who had initially planned on a mainstream IT career with a local bank, was so taken with the internship experience at MIT that he joined the GAMBIT games lab soon after graduation. He served as a programmer in the team that produced a 3D puzzle game known as *Phorm*. The game capitalises on a process known as automatic rigging to animate 3D characters. Players have the freedom to draw any basic shape which can be transformed into animated characters by automated rigging. The simplicity of the process which allows players, for example, to redraw their avatars is a strong advantage.

Team member Chong's role was that of quality assurance leader. The team faced many challenges, he said, including a tight schedule comprising eight weeks in total, working eight hours a day, five days a week to complete the project. "We spent almost three weeks coming up with the idea. All of us faced pretty difficult technical challenges. Hence, we had to help each other along the way and this fostered bonding," he recalled.

Chong was also struck by the different work culture at MIT as compared with Singapore. "We were encouraged to work from 9am to 5pm. Any work done after 5pm was frowned upon. So we worked very seriously during office hours and put in overtime only when there was a real need. After work, we were treated to movies, games or media nights where the department heads showed us, and talked about [productions] that are cool and interesting."

Chong was involved in developing *Akrasia*, a single player game that challenges conventions and is intended to make the player think and reflect. It is based on the abstract concept of addiction which is expressed metaphorically throughout the game. The game is set in a maze representing the mind with two states, a normal and a psychedelic one. The player is faced with difficult decisions in alternating between the two states of mind in the course of a journey from addiction to cold turkey.

Muhammad Bin Mohsin was part of the team that developed *Moki Combat*, a 3D game that breaks away from the traditional idea of a fixed set of animations. The game is designed such that the character is capable of reacting dynamically to the environment.

Commented Balan, "A key feature of the GAMBIT programme is that it allows students to interact with key game developers already working in the industry. This is done through talks and small group interaction sessions. This allows the students to really understand what it takes to work in the games industry. The net result of this interaction, coupled with the hands-on experience of game development, has convinced many of the programme participants to join the game industry full time. GAMBIT provides many avenues for interested students to meet with interested employers in the games industry."

Future Schools@Singapore Project

The government of Singapore has allocated more than S$500 million to promote strategic development, and to oversee research and development initiatives within the interactive digital media (IDM) space, of which gaming is one core component. IDM has tremendous potential to benefit many industries including the education sector.

As for the education sector, S$80 million will be spent over the next four years to build immersive learning environments, including use of IDM, for students in the Future Schools@Singapore project. Five schools earmarked for the project will work with four consortia which have been selected to develop and deploy next-generation infocomm-enabled learning applications. Comprising Beacon Primary School, Canberra Primary School, Jurong Secondary School, Crescent Girls School and Haw Chong Institution, these five schools will lead the way for others in providing models for integration of infocomm into the curriculum and pedagogy for engaged learning.

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